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AN ANNOTATED BIBLIOGRAPHY OF BASIC RESEARCH BOOKS

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AN ANNOTATED BIBLIOGRAPHY OF BASIC RESEARCH BOOKS

by

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Coordinator of Graduate Studies
Dept. of Recreation and Leisure Administration
California State University, Northridge

Ackoff, R. L. The Design of Social Research. Chicago:
University of Chicago Press, 1953.

This book represents "an important step in the maturation of a science." Mr. Ackoff feels that the steps involve the formulation of research techniques and methods. This volume provides a methodology of social research, one that has within it, guidelines that should prove valuable to any and everyone interested in research in the social sciences.

Ackoff, R. L. Scientific Method: Optimizing Applied Research Decisions. New York: John Wiley and Sons, 1962.

Mr. Ackoff does another outstanding job in presenting a work that allows one to look at science as a remarkable phenomenon. This book in the author's words, "is essentially a how-to-do-it rather than a what-to-do-it-for book." This is a book on planning or designing the use of science in the pursuit of objectives.

Anderson, Richard L. and T. A. Bancroft. Statistical Theory in Research. New York: McGraw-Hill Company, Inc., 1952.

The authors of this book have written a combined textbook in mathematical statistics and a reference book for the research worker. The book has been divided into two major sections. Part I presents basic statistical theory with some emphasis on research problems and Part II presents the theory of least squares and its use in the analysis of experimental data. T. A. Bancroft is primarily responsible for the writing of Part I and R. L. Anderson for the writing of Part II. The text is designed to develop a general theory first, then to present examples that apply. The authors recommend that the student of statistical theory have a good background in differential and integral calculus before attempting to work with this book.

Backstrom, Charles H. and Gerald D. Hursh. Survey Research.
Northwestern University Press, 1963.

This book could be called a handbook for research in political behavior. It is basically a practical guide for those who wish to learn the rudiments of the survey method and to "gather information about a large number of people by interviewing a few of them."

Barzun, Jacques and Henry F. Graff. The Modern Researcher.
New York: Harcourt, Brace and World, 1962.

A scientific tome written in very "unscientific" style. A style that lends itself to easy reading and comprehension. The author has attempted quite successfully to offer the latest (1962) research methods to the contemporary researcher.

Bergmann, E. Philosophy of Science. Madison: University of Wisconsin Press, 1957.

The literature of the philosophy of science is very large; the number of books is relatively small. In this book, an excellent discussion of the what and why of science is presented by the author in a style that is discernible in terms of content and format.

Blalock, Hubert. Social Statistics. New York: McGraw-Hill Series, 1960.

The author has designed this book primarily for those students of sociology who actually intend to engage in social research. The text has been written so as to avoid mathematical derivation in-as-much as possible, although the author is convinced that certain basic and fundamental ideas underlying the principles of statistical inference must be thoroughly understood. Therefore, there is a relatively heavy emphasis on the underlying logic of statistical inference. The book has been designed to limit the amount of mathematical problems and for that reason, the author has not attempted to cover a wide range of applications but has selected examples of primary importance to sociologists. The author has chosen to use only one example for each new topic discussed. Additional examples are given in the form of exercises at the end of each chapter. In general, the author has attempted to reach a balance between the desirability of stating basic principles as clearly as possible and the necessity of repeating some of the more difficult concepts each time a new topic is discussed. New ideas are introduced gradually, and the author has made an effort to relate each new topic to those which have preceded it.

Borg, Walter R. and Meredith D. Gall. Education Research, An Introduction. Second Edition. New York: David McKay Company, Inc., 1971.

This book may be used as an introductory textbook for the graduate student in educational research. It covers the essential factors needed to take the student through the entire research process from the identification of the problem to writing the thesis.

The material is easy to understand, practical, and contains examples from published studies to help the student in understanding research concepts and techniques.

The chapters are organized so that they follow the steps needed to complete a research study. The introductory chapters deal with how to formulate the research problem and initially plan the study, and how to review the literature. The next chapters discuss research designs, sample and selection, and techniques for data collection, presentation, and analysis. A chapter concerning report preparation follows.

This book can serve as a handbook for students or a textbook for instructors. There is a considerable amount of information presented in each chapter along with annotated references to assist students in locating current supplementary information on each research topic.

The Appendix contains several useful items including the following:

1. Questions to be Asked by the Student in Planning a Research Project in Education.

The questions cover the areas of scope and definition of the study, the hypothesis, the background, definitions, methods of study, design, sampling, tests and measures, content analysis, and statistical handling of results.

2. Checklist for Evaluating Experimental Research in Psychology and Education
3. A Listing of Twelve Research and Development Centers and Their Directors, Throughout the U.S.

Braithwaite, R. B. Scientific Explanation. Cambridge:
Cambridge University Press, 1953.

The purpose of this book is to examine the logical features common to all the sciences. Every feature of science is examined from the development of the scientific system, weaving its way through calculus, inductive and deductive thinking and finally arriving at the explanation of scientific laws. A must for the neophyte researcher.

Brownlee, K. A. Industrial Experimentation. New York:
Chemical Publishing Company, 1953.

This monograph is designed for the benefit of those who are involved in investigational works to use as a guide to modern statistical methods. It deals primarily with the use of tests of significance to attain reliability in deductions from experimental data and the use of statistical design to attain the maximum precision with the minimum expenditure.

Campbell, William G. Form and Style in Thesis Writing.
Boston: Houghton Mifflin Company, 1969.

Campbell has written a very comprehensive book for the researcher who is involved in writing a thesis. He describes the format of a thesis (p. 1). The format includes three categories of material: the preliminaries, the text of the thesis, and the reference materials. In his discussion of quotations, Campbell emphasizes that the researcher should take every precaution to document quotations properly (p. 12). He describes the elements of indirect and direct quotations, and explains how quotations may be altered. Footnote and bibliographical references are essential in order to give credit for a borrowed idea and develop some validation for the researcher's work. After discussing the purpose of footnotes, Campbell describes the format of footnotes in great detail (p. 22). His description is aided by extensive use of illustrations. Campbell briefly discusses the form and content of the bibliography (p. 43), after which he gives special attention to the reference-cited format (p. 46). Pages 56 to 71 are essential for any researcher. These pages include examples of almost every type of footnote or bibliographical entry imaginable. Tables and figures are among the tools of analysis and communication used by researchers. Campbell describes the basic information concerning tables (p. 72) and figures (p. 79). Again, his use of examples (pp. 86 to 96) are helpful for any researcher.

Campbell then turns to the composition and construction of the thesis paper itself. He emphasizes that consistency is an important element in writing style (p. 98). The essentials of grammar are briefly reiterated (p. 99). Some peculiarities which apply to thesis writing are described (p. 103). These items include person, verb tense, numerals, abbreviations, enumerations, and editing. Guidelines and suggestions for typing a thesis are included (p. 108). The appendix contains valuable information and illustrations which help to clarify the format of thesis writing (p. 119).

Carey, R. J. P. Finding and Using Technical Information.
London: Edward Arnold Publishers, Ltd., 1966.

Due to the increase in the amount of information available to students in the library, and because patterns of publishing are becoming more varied and complex, this book has been designed as a handbook to make it easier to locate information needed to complete a research paper, an oral report, or some other type of report.

The material presented is brief but clear. Several basic areas in library use are covered including the following:

1. Arranging and Recording Documents in a Library--
Classification and Cataloging
2. Using General Reference Books
3. Using Periodicals
4. Short Cuts to Information
5. Research and Development Organizations
6. Systematic Literature Search
7. Evaluating the Information
8. Writing a Technical Report

Nineteen illustrations are also given showing examples of items found in a library such as catalogue entries and index cards. Technical information is included at the end of the book including a glossary of library terms, machine document copying process, and teaching notes.

This book can be very useful for those who are not familiar with using the library.

Chapanis, Alphonso. Research Techniques in Human Engineering.
Baltimore: The Johns Hopkins Press, 1959.

The aim of this book is twofold. Its first purpose is to describe some of the methods available to the human engineer for collecting trustworthy data on men and machines and the relationship between them. Its second purpose is to discuss some principles and guidelines about ways of doing dependable studies on people. Chapanis has been practical and selective in his discussions. In his introduction, Chapanis explains several principles and makes several assumptions concerning the difficulties of conducting human research (p. 11). In spite of these precautions, Chapanis positively states that human activities can be studied by studying behavior, the thing people do. His first concern is with the methods of direct observation (p. 23). These methods are characterized by the fact that the researcher goes into an actual work situation and observes what goes on there. Chapanis is very clear and concise in his presentation, and his use of figures, tables, and illustrations is very helpful for the researcher in this area of study. Dealing with the specific situation of accidents and near-accidents, Chapanis discusses certain methods which may be used to study these difficulties in human engineering (p. 76). Next, he attempts to acquaint the reader with some of the computational methods involved in research and to persuade the researcher to consider how the data will be treated before the experiment is actually planned (p. 96). The cream of research techniques is the experimental method and Chapanis takes great pains to cover this area thoroughly by stating certain principles of the experimental method and by describing such methods from the most simple to the most complicated (p. 148). When dealing with people, control of the experiment becomes a challenge. Chapanis discusses these problems by describing some independent and dependent variables in human engineering (p. 208). Special experimental procedures which are used in human engineering studies are known as psychophysical methods (p. 253). These methods are concerned with the measurement of relations between psychological magnitudes and physical magnitudes. At the end of this book, Chapanis includes an extensive bibliography of 118 sources.

Chapin, Francis. Experimental Designs in Sociological Research. New York: Harper and Brothers, 1955.

Chapin attempts to move beyond the first stage of social experimentation. He feels that experiment on nature, human beings, and communities are still in the experimental stage of trial and error (p. 17). The subject of his book is to obtain observations of social relations under conditions of control (p. 26). If scientific research is to advance, then measurement must be at the center of experimentation. Before such measurement can be obtained, a researcher must know what he wants to measure and set up his design accordingly. Most Helpful to the researcher is Chapin's discussion of three main designs: the cross-sectional experimental design (p. 34); the projected experimental design (p. 51); and the ex-post facto experimental design (p. 95). In each description, Chapin utilizes specific examples, studies, and applications in order to clarify each design.

Chapin states that social cause and effect is extremely complex (p. 140). He reviews a list of instruments of social observation which are available for use in studies by experimental design. The applications of psychometrics, demographics, and sociometrics, as described by Chapin, offer the researcher some specific ideas about how these instruments are used. A summary of these instruments is located on page 157.

Studies by experimental design are not always "clear cut." There are some practical obstacles and theoretical limitations in each case. These problems are listed and clearly demonstrated by past studies (p. 115). Statistical methods are briefly described by use of examples (p. 202). Chapin concludes with a discussion of the problems in psycho-social measurement (p. 249). These problems include the pressures, values, funds, and bias which affect the process of experimentation and measurement in sociological research.

Churchman, C. West. Theory of Experimental Influence. New York: The Macmillan Company, 1948.

The presuppositions of inquiry have become far more complicated than early experimental science ever dreamed possible. Churchman makes every attempt to demonstrate this complicated methodology from the outset of this book. He describes the nature of statistical tests (p. 1). Such characteristics include normal distributions and randomness. After establishing the question for his inquiry, Churchman begins by outlining the general

methodology of inference (p. 14). There are some important rules of this methodology: 1) a formal theory of probability must be given, 2) there must be given a set of observations, 3) alternative hypothesis are to be constructed, and 4) a method must be formulated for selecting one of the alternatives on the basis of the probability theory and the observations. After discussing the problems of this method, Churchman delves into a philosophical approach to experimental inference. First of all, he must establish the dialectic of modern philosophy (p. 44). The next five chapters discuss various elements of philosophy which are related to experimental inference. These elements include rationalism, naive empiricism, statistical empiricism, criticism, and relativism. The researcher who is conducting basic research may find that this material is much too complicated for a simple understanding of research methodology.

As Churchman continues his discussion of experimentation, he defines the purpose of science as the search for meaning and truth by answering questions (p. 172). Next, he describes the methodology of finding answers to the questions asked in research (p. 185). This material is a summary of chapter 2. Finally, he gets around to defining certain nonmechanical concepts of the experimental method (p. 195). Realizing that much of this discussion must be unclear, Churchman attempts to clarify matters by describing various applications of experimentation (p. 213). There are basic conflicts which arise, in science, some of which are the human factors, personality preferences, and "impurities." He discusses such concepts as efficiency, convenience, and necessity. Although there is an ideal in science to control the quality of science, such perfection is marred by chance, loss, and risk. The researcher who would like to study the philosophical implications of science and experimental methodology would find this book helpful.

Cochran, William G. Sampling Techniques. Second Edition. New York: John Wiley and Sons, 1959.

The purpose of this book is to present a comprehensive account of sampling theory as it has been developed for use in sample surveys. Cochran has designed this book as a guide for the student that does not have the access to formal instruction. This perhaps is true, but good advice for the person reading this book would be to take a course or two in calculus. The book deals with the simple random sampling methods, proportions,

estimations of sample sizes, ratios, and of particular interest for the reader might be sources of error in surveys: particularly in dealing with the no-response element in dealing with questionnaires. This book can be termed a progression book as it is perhaps best suited for the intermediate person in research.

Cochran, William G. and Gertrude M. Cox. Experimental Design. New York: John Wiley and Sons, Inc., 1957.

The purpose of this book is to describe in some detail the most useful of the designs that have been developed, with accompanying plans and an account of the experimental situations for which each design is most suitable. The justification for the initial discussion concerning the contribution of statistics to experimentation becomes apparent throughout this entire 595-page book. The authors describe the initial steps in the planning of experiments (p. 9), and describe methods for increasing the accuracy of experiments (p. 15). Replication, additional measurements, and grouping of the experimental materials are only useful if the precision of the experimentation is maintained. The basics of statistical analysis are discussed in chapter three (p. 45). Although randomization is questioned concerning accuracy, it is an obvious design for many laboratory experiments. Included in this discussion are descriptions of latin squares, cross-over designs, and designs for estimating residual effects (p. 95). Most of the designs which are described in this book are clarified by examples and illustrations.

The next five chapters discuss factorial experiments and all of the variations of this basic design. In a factorial experiment, the effects of a number of different factors are investigated simultaneously (p. 148). The beginning researcher will find this book too complicated to comprehend because its content is obviously geared toward the advanced researcher. Throughout the rest of the book, the authors discuss and describe such concepts as multiple linear regression (p. 336), the method of steepest ascent (p. 357), incomplete block designs (p. 376), lattice designs (p. 396), balanced and partially balanced incomplete block designs (p. 439), lattice squares (p. 483), incomplete latin squares (p. 507), and experiments of unequal size (p. 555).

Cohen, Morris R. and Ernest Nagel. An Introduction to Logic and Scientific Method. New York: Harcourt, Brace and World, Inc., 1934.

Throughout the first half of this book, the authors discuss the elements of formal logic. Formal logic develops possible relations between propositions and demonstrates that any proposition must be true if certain others are so (p. 191). Logic is related to evidence through different means: reflection, generalization, implications, probable influence, induction, and deduction (p. 3). Propositions are defined (p. 27) and categorized according to compound, simple, and general qualities. Propositions become meaningful only in relation to other propositions. Logic demonstrates such relationships as being equivalent or in opposition (p. 62). Categorical and hypothetical syllogisms are described as two means to relate propositions. Both types are marked by characteristics of validity and of inconsistencies (p. 76). Validity of demonstration depends not on the truth or falsity of premises, but upon their form or structure (p. 110). Mathematical axioms and theorems are such forms. The authors take the natural step from mathematical logic and discuss the elements of probability (p. 157). Finally, they discuss the problems of formal logic.

The second half of the book becomes more applicable for the researcher. Beliefs usually precede hypotheses. Beliefs are based upon habit, authority, intuition, or scientific inquiry. After describing how hypotheses are formulated (p. 200), the authors state three main conditions of a hypothesis. It must allow for an answer, be verifiable, and be reduced to its simplest form (p. 207). The significance of definitions and classifications is explained (p. 223). A definition can only be significant if it demonstrates certain properties (p. 238): 1) it must give the essence of what is being defined, 2) it must not be circular, 3) it must be put into positive terms, and 4) it must not be expressed in obscure language. Methods of experimental inquiry are explained by methods of agreement, of difference, of agreement and difference, of concomitant variation, and of residues (p. 251). The method of science cannot omit the foundations of applied mathematics. The process of counting leads into the statistical method (p. 302). Does history employ the scientific method (p. 323)? The authors spend a chapter establishing a positive answer to this question with certain qualifications. Moral, critical, and practical judgments may be considered scientific if they follow a logical procedure. This procedure, however, contains errors of reasoning (p. 376). The authors conclude by explaining the fundamental factors of the scientific method (p. 391). The most positive help for the researcher is the appendix of this book. The appendix contains 42 pages of exercises in logic and scientific method--a real experience.

Culbertson, James. Mathematics and Logic for Digital Devices.
New Jersey: D. Van Nostrand Company, Inc., 1958.

Electronics and mathematics majors should find this particular book interesting, for it gets into these two fields with great gusto. Actually, the author states early in this book that he wrote this manuscript mainly for undergraduate students majoring in electronics and mathematics. However, he emphasizes that he also wished to instill a better understanding of the computer field into the reader's mind, and herein lies the book's relevance for the researcher. Culbertson has set up his presentation in textbook type fashion, spending much time explaining different theorems and measurement devices used in the computer field. These explanations are quite comprehensive and detailed, so the reader should be forewarned. A great deal of math, and new electronics terms are introduced to the reader, thus requiring a great deal of thinking and study. Yet, it should be noted that Culbertson's main objective is to acquaint the reader with the computer field, so the trouble is worth the effort.

In short, this mathematics and electronics combination is designed to abet the researcher in his use of computers. It contains new terms which will be foreign to the reader, but beneficial in the long run if he remains involved in the computer field.

Dornbusch, Sanford M. and Calvin F. Schmid. A Primer of Social Statistics. New York: McGraw-Hill Book Company, Inc., 1955.

Statistics is like a foreign language. Consequently, statistics must be learned like a foreign language is learned--by studying daily, learning new words, and building on previously learned materials. The format of this course attempts to make this learning process as simple as possible. The authors first explain the principles involved in organizing data in groups or classes in order to save the researcher some time and effort (p. 3). Most of the principles are clarified by explicit examples. Just as statistical tables summarize masses of statistical data, so charts and graphs are used to portray numerical facts in a simple and concrete manner. Such charts and graphs are adequately described (p. 22). The basic rules of the summation of all of this data are discussed (p. 53). Once the data is tallied, it is helpful to find the measures of central value such as the mode, mean, and median (p. 61). From these central values certain measures of variability can be

measured (p. 73). Also a comparison of data allows the researcher to determine various ratios, proportions, and rates (p. 91). After thoroughly describing the basic principles of statistics, the authors seek to explain the principles by which the usual measures can be computed when the data are presented in grouped form. This discussion becomes more complex (p. 105).

The remainder of the book contains a description of how these measures can be used in the context of statistical inference. The logic behind statistical inference is first explained (p. 124). The basis of statistical inference is the sampling distribution. The sampling distribution of proportions is the binomial (p. 131). A description of the normal distribution follows (p. 139). The logic of statistical inference is further developed in an analysis of the sampling distribution of proportions and of means (p. 147). Based upon a discussion of the relationship between two variables, the topics of correlation and contingency are developed to determine the strengths and weaknesses of each technique (p. 178). Each chapter is concluded with a series of exercises which attempt to aid the researcher in learning the techniques of handling statistics as outlined in this book. This book proves to be a valuable tool for any researcher who will be involved in basic data collection and analysis.

Ferguson, George. Statistical Analysis in Psychology and Education. New York: McGraw-Hill Book Company, 1959.

An introduction to the concepts and applications of statistics in psychology and education is presented by the author. Emphasis is placed on the analysis and interpretation of data resulting from experimentation. The author has not only attempted to introduce the student to the practical technology of statistics but also to explain in a nonmathematical and frequently intuitive way the nature of statistical ideas. The book is designed as a text for an introductory course in statistics and as a result the material which is presented is somewhat simplified. The author has chosen to write the text in a style for the novice of statistical data to comprehend with a minimum of difficulty.

Fox, David J. The Research Process in Education. New York: Holt, Rinehart, and Winston, Inc., 1969.

This lengthy text provides a thorough overview of both the theoretical and practical aspects of research. The material presented can be useful to the undergraduate student who is taking his first course in research, to the graduate student who must complete a research paper or project, and to the educator who must study problems and evaluate programs by using the research approach.

The text emphasizes how to conduct research in the reality of a school setting. It provides a person with the background needed to help him toward an understanding of the various stages of the research process and in learning the specific steps for starting and completing each stage.

Conducting research is also viewed as a total process in terms of how any one stage is affected by decisions made in earlier stages which in turn, can affect the stages that follow.

The book is written in four parts as follows:

- a. Part I - Introduction and Basic Concepts
- b. Part II - Foundations of Research Planning
- c. Part III - The Process of Data Collection
- d. Part IV - The Process of Data Analysis and Data Presentation

This book presents a middle level at which to teach research. Heavy emphasis is placed on making research decisions, on developing the ability to recognize the alternatives available, and on learning to choose rationally between them.

The book begins with a complete research project conducted in the New York City public schools in the early 1950's. This material provides the reader with a feeling of what the entire research process is like. There are also many illustrative comments and examples concerning the research process throughout the book.

Francis, Roy G. and Thomas C. McCormick. Methods of Research in the Behavioral Sciences. New York: Harper and Brothers, 1958.

The co-authors of this particular book have developed a comprehensive, easy to understand, methodology in regards to conducting one's research. They begin with a delving into the principle ideas which underlie the theory of research in the behavioral sciences. Advice is given to the researcher in terms of how to select his problem. Chapter III explains the research study design, stressing the researcher's ability to control variables. The authors even go into the ways of using the library in research, how to take notes, how to research literature and periodicals, and how to outline the study itself. In Chapter V, we get a lesson in measurement techniques, including rating, scoring, scaling, and index construction. The middle chapters of this text all develop the research project, and the analysis of it. We learn how to sample, graph, and test relationships. We get technical advice, including the ways of using McBee Cards, formulas for checking samples, and methods of approaching factor analysis and reducing the number of variables to smaller, basic factors. Finally, we come to the research report, and a detailed discussion of the technical aspects of writing the research report. Included in this section are the length of reports, typing technicalities, and so forth. A very valuable section.

There is not too much one can say about such a text book except that it is easy to read, easy to follow, and should be utilized by beginning researchers for its basic information.

Freedman, Paul. The Principles of Scientific Research. Second Edition. New York: Pergamon Press, 1966.

The material in this book is primarily directed toward the young scientist who is just entering the field of research. Research as a total process is discussed along with some principles and problems related to this field.

There is discussion on how one should conduct research and how much thinking and planning should be done before undertaking a research project. Other problems facing the novice are also discussed. Suggested guidelines rather than absolute rules are presented to the reader.

Chapters are included dealing with the nature of research, its history, research and society, research and philosophy, and planning the research project.

The book is also directed in part, to the administrator who may be supervising a research group. It points out the essential qualities of scientific research and the vital needs of each research worker.

The material is brief and clearly presented. Simple examples illustrating principles in research are given. A minimum of mathematics is used. An appendix is located at the back of the book along with fourteen references concerning research.

Greenwood, Ernest. Experimental Sociology--A Study in Method. New York: King's Crown Press, 1945.

The basic purpose of this book was, as I construed it, to scrutinize the "ex post facto" law. This law which states that if X precedes Y, then X becomes a necessary variable for the occurrence of Y in all cases. Greenwood begins with a discussion of current concepts of experimental methods, and concludes that experiment will be defined as purposeful and directed observations as opposed to random and haphazard ones. Later we see that he develops his definition to say that experiment is the proof of a hypothesis which hooks up two factors into a casual relationship through the study of contrasting situations, which have been controlled. How does this relate to the ex post facto law, which he basically defines as "cause and effect and effect and cause." (p. 49). The problem, as Greenwood sees it, revolves in the inability, or the neglect, of scientists to set up proper control factors. He cites social attitudes and subject attitudes as primary problems in this regard.

The important points of this book begin around his discussions of factor control (p. 80), and these are expounded upon in the following pages. For instance, Greenwood delves into the definition of factor control, a development of insight into problems of factor control, factor equation, and randomization, to name a few.

Experimental Sociology is a fairly easy book to understand. Greenwood lays out his hypothesis very early in his book, in most clear terms, and develops it very clearly. It would seem to help the reader understand experimental procedures, and to pinpoint different problems in setting them up.

Hayman, John L., Jr. Research in Education. Ohio: Charles E. Merrill Publishing Company, 1968.

This publication is designed to introduce the reader to the field of education research and provides a general overview of this specific area within the professional education field.

The reader is provided with a brief but concise presentation of some of the basic concepts in research education including the following:

- a. definitions and levels of research
- b. the process of theory building and its relation to research
- c. identification of a problem and planning of the study
- d. location of resources and purpose of the literature review
- e. preparation of the study design

Three general research methodologies are also briefly explained including:

1. Historical Research (p. 49)
2. Descriptive Research
 - a. Observation (p. 57)
 - b. The Survey (p. 65)
 - c. Content Analysis (p. 79)
3. Experimental Research (p. 85)

A glossary is located at the end of the book and is helpful for those who are not familiar with the "research language." Sixty-nine short and clear definitions are given.

A reference source of forty-one books is also included. The books are annotated and arranged in terms of general research topics. This list of books will be useful for the student who intends to conduct a research project because he will need to read in much more detail than this book provides.

Hillway, Tyrus. Introduction to Research. Second Edition. Boston: Houghton Mifflin Company, 1964.

The author of this book presents a clear description of main principles and methods of research in nontechnical terms. The material is useful for the graduate student and other people interested in this subject.

Major areas of research are covered including the acceptable methods for research, how to choose suitable problems for study, the difference in standards between a research paper and a scholarly essay, how to organize and write a research paper, and how to publish the discoveries. These and many other questions on principles of research are discussed.

The book is divided into four parts. Part One discusses the meaning of research and its problems; Part Two briefly describes the research process and ways to plan a study; Part Three presents methods of finding and analyzing data and how to draw conclusions; Part Four deals with the preparation of the report and how to have it published.

The object of the book according to the author, is to provide information that will make the principles and methods of research clearly understandable and therefore should make research itself easier and more effective. The book provides a general orientation to research in all fields because the basic principles are the same.

A selected bibliography of one-hundred and seven research books is included.

Johnson, Ellen. The Research Report, a Guide for the Beginner.
New York: Ronald Press Company, 1951.

The material presented in this book introduces the inexperienced student to the essentials of research. The procedures for investigation, compilation, quotation, and documentation are discussed along with the simple mechanics of research.

Section One deals with the subjects for research papers, the bibliography of the study, the notes for compilation, and the format for a formal report.

Section Two is "Models and Adaptations" (in research) and as in Section One, the author presents several illustrated examples of student research written by undergraduates of the author's classes at Purdue University. They show actual examples of common mistakes made by students in research writing.

The Appendix includes a brief list of reference works under the headings of Bibliographical Guides and Indexes, General (reference) Information, and Style (for writing). Illustrations of bibliography cards and data notes are also included.

This book is simply and clearly written and there are pages in the back of the book titled "Student Notes" which allow room for a person to write any supplemental information in research that may be of use to him.

Kaplan, Abraham. The Conduct of Inquiry. San Francisco: Chandler Publishing Company, 1964.

In the first two chapters of Kaplan's book we see that this is going to be a very deep presentation. We see forming, a philosophical outline, one which may act as a basis in conducting research. Much time is spent explaining the relationships between methodology and theory, in discussing concepts, terms and laws. All throughout the beginning chapters, Kaplan plays down the role of methodology and emphasizes the researcher's grasp or understanding of behavioral scientific research. He states that methodology is really a general term, that is, no different from one science to another (p. 30). The middle chapters, IV through VIII, delve more into technique. Here also, Kaplan tries to produce an understanding of behavioral science through discussions on experimental procedure, the measurement of data, and statistical analysis. The emphasis is not on how to conduct research, but on the meaning of research technique. The final chapters deal with theory, values, and explanation. He refers to theory as contrasting to practice, that is, one can learn by practice, but one learns from theory (p. 295). This theme is infiltrated throughout the book. Explanations will clarify meaning (p. 327), pointing out another instance where the author is not satisfied with simple definition, but gets into an involved, insightful definition.

Kaplan's Conduct of Inquiry is a meaningful book in that it goes a bit deeper than most books in discussing research. Instead of mere definitions, we are given discussions meant to make us think rather than memorize. A scholarly book.

Kerlinger, Fred. Foundations of Behavioral Research. New York: Holt, Rinehart and Winston, Inc., 1964.

Here we have a text-book type presentation, covering, as the title states, basic foundations of behavioral research. Kerlinger has divided his book into several sections. He spends the major portion of the earlier chapters with an explanation of the mathematical foundations of research. Once again, the reader should be ready to analyze a few mathematical situations, and perhaps spend a little extra time reviewing old math techniques. Kerlinger does make things a bit easier for the reader in that he devotes a great deal of time in defining his terms and concepts. For instance, in discussing variance, he utilizes a good four pages (pp. 95-99) explaining the different types of variance,

before getting into a mathematical analysis. The middle chapters concern themselves with the measurement of research. He first spends a great deal of time discussing the research design, which he calls the overall scheme of research (p. 275). From this discussion, he relates to the reader the terms validity, reliability, sociometry, and semantic differential. Kerlinger again is very easy to understand, and this is due to his very good definitions. The final sections deal with methods of interviewing, setting up rating scales, projective methods, and the interpretation of research. It should be noted that the author has included a very fine set of appendices, which discuss, among other things, the importance of computers in research. These appendices should not be skimmed over, but should be studied in as much detail as the rest of the book.

Kerlinger has constructed a very informative textbook. There is nothing pretentious about his style, and he has made a seemingly difficult presentation very easy to understand. Along with its fine appendices, this book makes for valuable reading, comprehensive and easy to follow at all times.

Lachenmeyer, Charles. The Language of Sociology. New York: Columbia University Press, 1971.

Lachenmeyer states, in the beginning of his book that sociology cannot be considered a science due to the "inadequacies of its theory language" (p. 1). It becomes apparent, as we read on, that he is sincerely disturbed by this, and that he has, as a motive, the development of such a language. He insists on the preciseness of such a language in order to eradicate vagueness. There is no room for ambiguity and contradiction (p. 58). Furthermore, Lachenmeyer reasons that too much time is spent in working out deductive explanations, when, with a precise scientific language, the same procedure may be reduced considerably. Chapter IV, dealing with systemization, explication, and observable human behavior, is the crux of the book. Here, the author answers several language problems, and thus develops a partial solution to the sociological language problem. He asserts that the main stumbling block for sociological language is the inability to designate spatio-temporal referents to verbal phenomena (p. 114). This is the problem that must be tackled by investigation and research.

A relatively short book (116 pages), The Language of Sociology presents interesting material for anyone interested in better understanding sociological methods and their pitfalls.

Lindzey, Gardner and Elliot Aronson. The Handbook of Social Psychology. Vols. I and II. Cambridge: Addison-Wesley Company, 1958.

The first two volumes of this five volume collection contain writings which discuss the fundamental theories on social psychology and which get into research methods. The works of twenty-eight different authorities are compiled, to present the reader with an impressive supply of professional knowledge. This method can be described as comprehensive in the least, in that we get different points of view, and that we are recipients of continuous variety.

Volume One contains an important compilation of theoretical basis' for social psychology. Perhaps this is more important to the researcher than Volume Two which deals with methodology. Methodology should be fairly common and generalized by now, yet different positions regarding theory may not be as well known. It is Volume One where we come into contact with various aspects of Role Theory. If one is not familiar with Kurt Lewin's Field Theory, he can get a brief, yet accurate description of this theory in Volume One. Cognitive Theory, or as Zajonc perceives it, the explanatory and descriptives aspects of social psychology (p. 321, Vol. I), is discussed in great detail. Perhaps the most interesting viewpoint expressed, in a classical sense, had to do with Freud's legacy to social sciences. Volume One, in summary contains meaty dissertations on the basic theories of social psychology.

Volume Two deals mostly with method. Here we get the viewpoints of several noted authorities on interviewing, attitude measurement, content analysis, cross-cultural research, and observational methods. These discussions are well put together, and very informative. What we really have is a practitioner's view of method. This minimizes generalization, and gives the reader inside tips on how research can be conducted.

Graduate students should find these two volumes extremely valuable as a background in research involving social psychology. The use of several authorities as references is, in this person's opinion, a great technique. It makes it difficult to put the text down, as long as another author's opinion or research is next in line. The co-authors of this multi-volume work, first edited in 1954, and revised in 1968, have really put together an excellent resource book for the graduate student.

McGrath, J. H. Research Methods and Designs for Education.
Scranton, Pennsylvania: International Textbook Company,
1970.

The author feels that the researcher needs and deserves some specific guidelines for the job which is undertaken. Consequently, McGrath is very methodical in his presentation of material. Chapter One presents an overview of the development of science and research and clarifies by definitions the terms and concepts which are used for scientific inquiry and research activity in education (p. 1). To accomplish this purpose, McGrath defines and explains the methods or kinds of science, research, assumptions, hypotheses, classifications, models, and theories. Chapter Two presents a number of approaches applicable to problem identification and hypothesis development by reviewing a number of situations common in the field of education (p. 35). The review of related literature is examined very carefully because McGrath feels that the literature research is a most important component in designing a research project (p. 55). Next, he identifies the methods of research which have utility for scientific inquiries in the behavioral and social sciences. The scientific inquiries include the controlled experiment (p. 79), the study (p. 84), the survey (p. 92), the investigation (p. 98), and the action research (p. 101). He uses figurative models to clarify his discussion of each type of inquiry. McGrath then describes how these classes of inquiry are applied to various research methods: descriptive, case investigation, case study, historical, follow-up study, trend study, activity analysis, and descriptive surveys (p. 103).

The next step in research is the study design. In simplest of terms, research design is a tedious and painstaking mapping strategy, which must not preclude the utilization of creativity and originality (p. 115). This section is very helpful for the researcher who is threatened by the importance of designing an appropriate road map. McGrath carefully alerts the researcher to some of the errors and problems which may thwart his best efforts (p. 143). By discussing the relation of communication and scientific inquiry, the author attempts to explore and explain further complicating aspects of deriving and reporting the systematized knowledge of scientific research. This discussion would be incomplete without a description of the benefits and pitfalls encountered in computerized research procedures (p. 179). Finally, when all of the mechanics of research are completed, the format of the report consummates the clarity of research (p. 195). This entire book is helpful to the researcher who is involved with a thesis or dissertation, although it neglects to describe such valuable areas on data collection and data analysis.

Miller, Delbert. Handbook of Research Design and Social Measurement. New York: David McKay Company, 1964.

If you happen to be a neophyte researcher, you'd be doing yourself a favor if you picked up this book. If you want to know how to initiate a research project, Section I of this book holds valuable information. If you want to know which scale or index to use in conducting your research, then Section IV will be of great help. Even if you wish to find out if any agency would be interested in supporting your research, Section A of Part V will be of great assistance. In other words, here is a "how to" book of the first order.

Miller has compiled a complete handbook, containing research methods, guidelines for data collection, statistical analysis, comparisons of various testing and rating scales and indexes, and a section of information regarding agency assistance, professional publications, and relative costing of research work. It's all here, and any researcher should find this book quite beneficial. However, one should not regard this as a textbook, or an ordinary guide to proper researching. Miller emphasizes that there is a lack of replication in research, a lack of re-testing. He states that a desire of this book is to promote creativity, to perhaps instigate researchers to develop new scales, improve methodology, and so on. In this sense, Miller really is trying to be suggestive, not merely a reference. His thoroughness aids his motives. He has included thirty-seven measurement devices and applies them accordingly to various situations, ranging from social participation to family and marriage. The reader is left with choices as to which method best suits his project. In so choosing, the researcher may possibly see a fault in the method, and thus improve on it. This is what Miller ultimately has in mind--the improvement of research in general.

If you are a researcher, this book may be of interest to you. It is fairly easy to follow, and can be quite informative. It should also be an inducement to carry on research in perhaps greater detail, and this is what Miller has in mind all the time.

Myers, Buddy L. Statistical Functions. Kent State University Press, 1970.

Statistical formulas are dealt with in this book in an elementary manner for those with a degree of some mathematical expertise. For those dissatisfied by the complex statistical texts we have here a book that

presents the basic formulas in a readable logical manner. This book recognizes formulas in terms of their origins, and with this approach: derivations are presented in detail, with all steps in formula computation figured in order as used. For the reader with a background in basic calculus the use of this book will certainly find a place as a research tool. Basically outlined this book deals with summations, probability, expected values, analysis of variance.

National Conference on Recreation Research. Recreation Research.
University Park, Pennsylvania, 1965.

This publication is one of the few in research that is related to recreation and its professional endeavors. It has only been since about 1960 that professional recreation practitioners and recreation educators have become vitally interested in research as an undergirding and vital aspect of recreation and park services. This valuable resource book illustrates the concern by professional recreation personnel and the mark of a maturing profession which is rising to the challenge through sound research.

The articles which make-up this book were taken from the speakers and conference participants from the national conference on Recreation Research, held November 7-10, 1965, Pennsylvania State University, University Park, Pennsylvania.

This collection of papers are divided into seven categories. The first category covers the challenge of research as it relates to recreation services. Also, the role research plays in federal and state services. The second category displays the effects of recreation on individuals and society. Research and user preferences is the third area. Here the writings concentrate on the interest of the user and the demands they place on the field. The fourth area of concentration is the function of research in administration, which is supported by the following three categories. The research process, cooperative research and finally, the funding of research.

The fact that the writings incorporated in this book relate only to the field of recreation is by no means a misfortune, if anything it is an education.

Noltingk, B. E. The Art of Research, a Guide for the Graduate.
Amsterdam: Elsevier Publishers, 1965.

This book is aimed at the research worker in graduate school. It presents some of the considerations which arise when a person wishes to conduct research. The book covers a wide area of subject matter including some principles and organization of research.

The material presented has no major theme but rather a collection of ideas to advise the researcher. More questions than answers are presented with the idea of

trying to make the reader think out his own answers based on brief ideas presented by the author.

The chapter headings are simple and different from most typical research headings. They are titled as follows:

Chapter 1 - What?; Chapter 2 - Where?; Chapter 3 - When?;
Chapter 4 - Who?; Chapter 5 - How?; Chapter 6 - Why?

The book is brief and easy to understand. There are twenty-five graphs and comic illustrations (cartoons) which humorously and effectively relay messages concerning the general research topics that are discussed.

Detailed footnotes and a bibliography of research books are also included to further assist the student in securing more detailed books.

Neurath, Otto, R. Carnap and C. Morris. International Encyclopedia of Unified Science. Chicago: University of Chicago Press, 1955. Two volumes.

The foundations of the unity of science composed the initial two volumes of a proposed International Encyclopedia of Unified Science.

These writings are a collection of work with the purpose of exploring the foundations of the various sciences and to aid the joining of scientific knowledge. These twenty such articles concentrate on such areas as: mathematics, theory of probability, physics, cosmology, foundations of biology, framework of psychology.

It would behoove any student of science to read and explore these readings and review its bibliographies.

Phillips, Derek. Abandoning Method. San Francisco: Josey-Bass Publishers, 1973.

The first two chapters of this well-written book set the tone for the rest of the text. By implying the inefficiency of sociological evidence in Chapter I, and by setting the conditions for bias in research in Chapter II, Phillips lets the reader know that he wishes to improve the use of measurement devices. Measurement issues make up the key to the advancement of any science (p. 37). From here, he goes on to discuss social desirability and invalidity, involving relationships between dependent and independent variables, and modeling effects (a rather minor, yet important source of bias).

s The meat of Phillips' book is contained in the middle chapters, five through eight, in which he points out the fallacy that sociology is a coordinated and objective science. "The charge of bias rests...on the individual" (p. 143). Thus, he asserts that no knowledge can be guaranteed to be objective or impersonal. By using

different research studies, he exposes the fallability of research and thus concludes that research methods in sociology cannot bind scientists to patterned belief in their knowledge. Rather, the scientist must consistently try to improve his methodology in order to develop a more cohesive, objective profession.

This book should be read by anyone who may have doubts as to the validity of experimental procedure. Phillips is concise and very easy to follow, using a philosophical approach to prove his point.

Popper, K. The Logic of Scientific Discovery. New York: Basic Books, 1957, trans. by Logik Der Forschung. Vienna, Autumn 1934.

This is a very perplexed book which attempts to provide the reader with a logical analysis of the procedure involved in scientific discovery, or the Logic of Knowledge; that is, to analyse the method of the empirical sciences.

The author opposes the view that the empirical sciences can be characterized by the fact that they use "inductive methods," as they are called. He goes on to say that "the principle of induction must be a synthetic statement; that is a statement whose negation is not self-contradictory but logically possible" (p. 28). Popper tells us or demands that "scientific statements be capable of being tested; or in other words, he refuses to accept the view that there are statements in science which people have accepted as true merely because it does not seem possible, for logical reasons, to test them" (p. 48).

This book is complete and very comprehensive. It provides the reader with an outstanding appendices.

Riley, Matilda White. Sociological Research I: a Case Approach. New York: Harcourt, Brace, and World, 1963.

The first thing noticed about this book is its systematic character. It presents a program for instructing students in the discriminating use of a wide range of methods now available for collecting, analyzing, and interpreting sociological data. The basic idea which Riley and her associates delivers in this book rotates around the concept that empirical research in sociology, as in other disciplines, requires a series of decisions, and awareness of alternative steps needed to collect pertinent data and to analyze them.

There are a great mixture of case studies included within this volume which is the first of a two volume set. Its companion volume will be annotated next.

When the reader completely comprehends and grasps this volume he will have reached a high degree of competence in the principal methods of sociological research.

Riley, Matilda White. Sociological Research II: Exercises and Manual-. New York: Harcourt, Brace and World, 1963.

This manual was designed as a workbook to use in conjunction with Volume I, Sociological Research: a Case Approach. Incorporated in this volume is a series of laboratory exercises which are intended to provide the student with experiences which are necessary to implement the design discussed in Volume I.

The exercises are grouped into five main sections: Section I contains observing and recording social interaction, questionnaire design, and the use of available data. The exercises in Section II illustrates the steps in coding, tabulating, analyzing, and delivering the data of a study. Section III deals with measurement and variables. Section IV points out the various methods of analysis and the relationships among variables. The exercises in Section V introduce the student to elementary procedures in sampling, and statistical testing.

Volume II is mandatory if one is to fully understand Volume I.

Roberts, Edward B. The Dynamics of Research and Development. New York: Harper and Row, Publishers, 1964.

In The Dynamics of Research and Development, Roberts presents and illustrates the entire life cycle of a social system from beginning through growth and maturity, to completion of purpose.

This book is aimed at two audiences: (1) the manager of research; and (2) the organization analyst who is seeking a more effective method for designing a management policy. But at the same time provides any beginning student of research the basic understanding necessary to carrying out a research project in the area of management.

Roberts feels that "a basic tenet of research and development is a belief in the value of research and development activities." He continues by saying that the "initial successes in managerial research into the management of research and development itself can serve as a springboard for research based on managerial improvement throughout the corporation and in the nation as a whole (p. 32).

Very interesting approach to research in the managerial areas. It behoves any student in management whether interested in research or not to read.

Schlaifer, Robert. Probability and Statistics for Business Decisions. New York: McGraw-Hill Book Company, 1959.

This provides the reader with a nonmathematical introduction to the logical analysis of practical business problems in which a decision must be reached under uncertainty. The author displays his beliefs in saying "that when the consequences of various possible courses of action depend on some unpredictable event, the practical way of choosing the "best" act is to assign values to consequences and probabilities to events and then to select the act with the highest expected value."

Schlaifer's purpose here is not to teach theory for its own sake but to illustrate how theory can be applied to practical advantage in the real world. He has divided the subject matter up into five separate major topics: 1) the use of probabilities based directly on experience; 2) simple random processes and derived probabilities; 3) the use of information obtained by sampling; 4) the value of additional information; 5) objectivist statistics: tests of significance and confidence intervals. At the end of each chapter exercises are provided to aid the reader in testing his comprehension of the theory presented.

This text is very in depth and requires each reader to process much more than just elementary statistics to fully understand and appreciate.

Scott, Gladys M., ed. Research Methods in Health, Physical Education, and Recreation. Washington, D.C.: American Association for Health, Physical Education, and Recreation, 1959.

A general guide to research methods specifically designed for graduate students and other workers in the health, physical education and recreation field is presented by the editor. The contents of this work are in a condensed form, but the basic principles for research are summarized with the citation of considerable sources to cover specific details of the techniques discussed. Emphasis has been placed upon the extent of research methods available, and the nature of their application to health, physical education and recreation. The book is generally designed to help the student in the application of research methods from the older, established discipline to the new, younger ones. The research methods in this book have been applied mainly to the solution of practical problems rather than towards developing fundamental knowledge. This book has been compiled by a number of authors. For this reason, the book has incorporated a

vast amount of knowledge from a wide variety of sources to complete the writing of this book. This collection should prove valuable to the student who seriously desires an acquaintance with the ways that problems in the fields of health, physical education and recreation may be studied scientifically.

Selltiz, Claire, Marie Jahoda, Morton Deutsch, and Stuart W. Cook. Research Methods in Social Relations. New York: Holt, Rinehart and Winston, 1962, 622 pp.

It is evident that this book is a leading source of material in the field of research methods in social psychology and sociology. This staff of researchers has provided the reader with a basic understanding in research methods who state that "the purpose of research is to discover answers to questions through the application of scientific procedures" (p. 2). Three complete chapters are devoted to the area of data collection, covering such areas as: (1) observational methods, (2) questionnaires and interviews, (3) projective and other indirect methods.

The appendices at the conclusion of this book includes a collection of some of the best resources available to the young researcher. Everything from estimating time for a study to a guide for questionnaire construction.

This book provides the investigator with the necessary information whether the student is planning a term paper, or the doctoral candidate starting work on his dissertation.

Sidman, Murry. Tactics of Scientific Research. New York: Basic Books, Inc., 1960.

This book is not, in the usual sense, a textbook, but it is aimed toward the experimental psychology student. This is due to the fact that Sidman concentrates on the conception of experimental methodology in scientific research.

The author begins by challenging the reader with three questions concerned with evaluating experimental findings: (a) the scientific importance of the data; (b) their reliability; and (c) their generality (p. 1). These questions which Sidman says are by no means independent of each other are answered and clarified within the context of the four major sections of this book. They are: 1. Guideposts for Evaluation; 2. Replication; 3. Variability; 4. Experimental Design.

The bibliography entries is one of the most impressive, with ninety-four references. They cover all areas of psychology, research, and related areas.

Excellent book for the student concerned with experimental approach to scientific research in psychology or the behavioral sciences.

Siegel, Sidney. Nonparametric Statistics. New York: McGraw-Hill Book Company, 1956.

The author believes that the nonparametric techniques of hypothesis testing are well suited to the data of behavioral sciences. Nonparametric techniques are suitable because they do not assume that the scores under analysis are drawn from a certain population distribution and they may be used with scores which are not exact in any numerical sense, but which in effect are simply ranks. Another advantage to using these techniques is that they can be computed easily. A final advantage of nonparametric tests is their usefulness with small samples which is helpful to the researcher who is interested in collecting pilot study data.

This book has been written to present the nonparametric techniques in usable form and in terms which are familiar to the behavioral scientist. Each test is presented according to the research design for which it is best suited. In describing each test, the author has attempted to indicate the sort of data for which it is useful, to present the proof for the test, to explain how the scores are computed, to give examples of its use, and to compare the test to its parametric equivalent.

Stevens, Stanley Smith. Handbook of Experimental Psychology. New York: John Wiley and Sons, 1951.

The author presents a handbook that systemizes, digests and appraises the state of experimental psychology. The book is extensive in nature with a total of 1362 pages. It is specifically designed for the advanced scholar. The book is divided into six major sections: Physiological Mechanisms, Growth and Development, Motivation, Learning and Adjustment, Sensory Processes, and Human Performance. Under these headings are thirty-six articles written by experts in each branch of psychology. Each article is very detailed in scope and extensive reference lists are given for each subject discussed. Many tables and graphs are included in the book to aid the reader in understanding the complex material that

is presented. In the appendix the authors have included a name index of many researchers in the field and lists the pages where their material is presented. It also has an extensive subject index to aid the reader in finding specific information quickly.

Stinchcombe, Arthur. Constructing Social Theories. New York: Harcourt and World Inc., 1968.

A very interesting book, from the viewpoint that the author makes use of concrete examples, such as power, the military structure, political access, and so on, to demonstrate the construction of theory. Stinchcombe's pattern of thought is never in doubt, thus making for interesting reading throughout. He begins with a rather thorough explanation of the processes of theory evaluation, concepts, and the use of demographic, functional and historicist data. He uses such theories as Marxist Functionalism as examples in the discretion of theory structure (p. 97). Interspersed throughout these examples are mathematical and graphic procedures which require thought and close attention, but which are not as much a part of the overall text as in other comparable essays. Stinchcombe also includes discussions involving concepts of attention (p. 238), variability, space related concepts, and ecological analysis, all under the discussion of activities. This is a particularly interesting section.

Stinchcombe relies then, on his ability to relate to the reader, the importance of variables in the formation of theories. He properly focuses attention on social factors, thus enhancing the reader's ability to think and form his own theories on such concrete, social ideas as politics, the power structure, and so forth. In short, a very good book, well recommended for those seeking a refreshingly pertinent source of information regarding social theory.

Suchman, Edward A. Evaluative Research, Principles, and Practices in Public Service and Social Action Programs. New York: Russell Sage Foundation, 1967.

Dr. Suchman has written a clear and comprehensive analysis of the problems and potentialities of evaluative research. Much of his book is concerned with difficult evaluative problems. He has attempted to apply sociological research methods to many fields and he demonstrates how extensive opportunities are for applying theory and research methods of social science to practical problems. He feels that research methods can be applied to these problems to determine how and to what extent planned

action intervention produce expected and unexpected outcomes. This book is designed to provide significant information for the evaluative researcher. It will aid him in reaching a workable balance between theoretical models and the situational realities in which he must work. For the student, the book should provide assistance in clarifying what competent evaluation involves and what it can do to improve theory and practice in professional studies.

Tuckman, Bruce W. Conducting Educational Research. New York: Harcourt Brace and Jovanovich, Inc., 1972.

Tuckman presents a very thorough description of the process of conducting research. After discussing the role of research in terms of internal and external validity, the author describes the characteristics of the research process (p. 10). Since the purpose of this book is to provide the potential researcher with those skills necessary to carry out the research process, the remainder of the book describes each step in the research process in detail. Since identifying a problem is the most difficult step in research, sample models are presented for helping to define and to identify problem areas and problems in education (p. 20). Once a problem has been identified, the researcher develops certain hypotheses about the concepts of the problem. Next, the researcher must identify and label the variables in the hypotheses. Five types of variables are described (p. 36). The author describes the necessity to move from the abstracts of variables by constructing operational definitions (p. 55). In order to make effective use of his variables, the researcher undertakes both manipulation and control. These techniques are described in Chapter Five (p. 72). A research design describes the operations involved in testing the hypothesis. The author describes several experimental designs and diagrams them within the context of internal and external validity (p. 103). Once the research design is established, the researcher can turn to the task of observation and measurement. Such techniques are identified and described by the author (p. 136). Since questionnaires and interviews are particularly helpful in educational research, the construction and use of these techniques are described (p. 173). Once data have been collected, conclusions can be drawn from them by statistical analysis. The author provides worksheets for six basic statistical tests in this step of research (p. 223). The basic skills and information necessary for computer use in data analysis are presented in Chapter Ten (p. 254). A thorough discussion of writing a research report

provides the researcher with basic guidelines for this process (p. 285). The research process would be incomplete without a discussion of evaluation. The evaluation is the means by which the reliability and validity of the research is conclusive. This book in its entirety is a helpful source for the researcher, especially with its recommended readings and competency test exercises at the end of each chapter. Also, much of the information in the book is clarified by specific examples.

Turabian, Kate L. A Manual for Writers of Term Papers, Theses and Dissertations. Chicago: The University of Chicago Press, 1955.

A guideline is presented for the writing of formal papers in both scientific and non-scientific fields by Kate Turabian. This guide provides the writer with the means necessary for the writing of a well documented, orderly presentation which is free from mechanical flaws. The manual considers the three major sections of a paper: the preliminaries, the text, and the reference matter. Miss Turabian discusses each phase in detail and provides the writer with specific examples. Included in the discussion of reference forms are: basic forms, special forms, second or later references, content footnotes and cross references. Footnotes and bibliographic references listed together to provide the writer with an immediate clarification of their differences. Chapters dedicated to the form and use of tables and illustrations are also included in the manual. In the appendixes, Miss Turabian includes a section on the proper typing of the formal paper and some rules of punctuation to aid the writer in the final stages of preparation. The style presented in this manual, in general, is based on A Manual of Style published by the University of Chicago Press.

Turney, Bill and George Robb. Research in Education: an Introduction. Illinois: Dryden Press Inc., 1971.

This publication can be used as an introductory text for the student who is taking his first course in educational research. It may also be used as a reference source for the classroom instructor who is interested in this area of education.

The material presented is limited, however, it is sufficient for the beginning student. All important areas of research are covered and there is equal treatment of research theory and application.

The material is written in nontechnical and concise terms with several illustrations and examples given to further help the student in his understanding of the important principles, concepts, and techniques used in research.

The first five chapters discuss the steps that one might follow when conducting a research study. They cover areas which include the selection and evaluation of research problems, the features necessary for a research proposal and the procedures for writing one, and the procedure for reviewing the literature.

The next five chapters deal with the three common types of research: historical, descriptive, and experimental, the analysis and treatment of data, the tools and techniques used in gathering data, and factors affecting research results.

Samples of a research proposal, a research report, and abstract are included in the last chapter as examples of these items in completed form.

There is no glossary of research terms nor is there a list of reference books to assist the student in securing other, more detailed books in this area of education.

Underwood, Benton J. Psychological Research. New York: Appleton-Century-Crofts, Inc., 1957.

This book deals with the problems met in using the methods of science to study behavior. Its primary purpose is to aid the reader, and in training those to become a better scientist who make psychology their subject matter. It also concerns itself with the scientific method as a means of studying behavior, by those who call themselves psychologists.

There are six major divisions in this book. 1) analysis of the research situation 2) operational definitions 3) research design: I 4) research design: II 5) some characteristics of concepts 6) the nature of some explanatory attempts.

This book is written for the student of psychology as well as the scientist of the same discipline, but provides any researcher with valuable data.

Van Dalen, Deobold B. Understanding Educational Research: an Introduction. New York: McGraw-Hill Book Company, 1962.

An appreciation for the complexity of social science phenomena, the difficulties investigators encounter, the importance of promoting sound research projects, and the need for applying the findings of significant studies in educational research are presented by the author. The book emphasizes the understanding of research and presents a variety of opinions rather than one school of thought. Experimental research is dealt with extensively, but historical and descriptive research are also fully discussed. The text is designed to aid the student who has a limited background in psychology, logic, and mathematics understand how scholars tackle investigations. The reader gradually becomes acquainted with the goals, basic assumptions, limitations, and language of the scientists. The text then gives some insight into how investigations are conducted, how problems are located, and how tools and skills are effectively utilized.

Walker, Helen and Joseph Lev. Statistical Inference. Henry Holt, 1953.

This book is for the advanced student or advanced researcher: it is involved demanding a great deal of time from the reader to understand its content. To understand the content of this book it is advisable for the reader to have a lead-in background from other sources. There are, in this reader's opinion, very complicated chapters dealing with statistical formulas, terms, and commonly used abbreviations. If a reader has a strong background in math he will be able to understand the theories and use of formulas presented in this book. No doubt this book will be a valuable tool as the researcher becomes more advanced and proficient.

Wiles, David K. Changing Perspectives in Educational Research. Worthington, Ohio: Charles A. Jones Publishing Company, 1972.

The purpose of this book is to promote a general understanding of the thinking process common to both research and daily educational decisions and to show the firm connection between educational research and practice. Research has established itself as a primary vehicle by which change is promoted and affected in education. With this thought in mind, Wiles attempts to describe the relationship of the researcher and the

practitioner in education (p. 2). Wiles demonstrates how directed thinking can be used for practical purposes (p. 14). Directed thinking involves describing the problem, testing an argument, and interpreting results. Once this process of decision making is clarified, Wiles relates directed thinking to other forms of thinking in education (p. 31).

The second part of this book discusses the scientific inquiry. The scientific inquiry is a formal process for the researcher confined to three phases: the construction phase, the carrying-out phase, and the conclusion phase (p. 60). The language of formal research includes such terms as: variables, statistics, variance, reliability, and validity. Each of these terms is discussed in Chapter Six (p. 70). The construction phase involves three steps: the theory, the definition of the problem, and the formation of an operational hypothesis (p. 81). Part of the carrying-out phase involves the development of the research design. This design lays out the way that formal research is to be carried out (p. 93). In his discussion of data collection, Wiles discusses three main questions: What is collected? How is information collected? Who is the information about? Wiles attempts to simplify the process of analyzing information (p. 117). Finally, Wiles discusses the conclusion phase of the scientific inquiry (p. 132), and describes how the practitioner can use the results of formal research to improve himself or herself as an educator (p. 145). The researcher may find this discussion helpful, but it is quite obvious that Wiles has written his book for the educator who is concerned more with the practicality of research as in information source.

Williams, Cecil B. and Allan H. Stevenson. A Research Manual. Revised Edition. New York: Harper and Brothers Publishers, 1951.

This book, which can be used as a research manual or a reference book, was designed to guide the beginning college student step by step through a practice paper. Although the book was primarily prepared for undergraduates, some parts have been written at the graduate level in the areas of library use and reference material, illustrations, and documentation in the research paper.

The chapter headings are as follows:

- Chapter 1 - The Nature and Uses of Research
- Chapter 2 - The Library and Its Role in Research Writing
- Chapter 3 - Library Tools and How to Use Them
- Chapter 4 - Beginning the Research Paper
- Chapter 5 - Planning and Outlining
- Chapter 6 - Notes and Note-Taking
- Chapter 7 - Illustration
- Chapter 8 - Documentation
- Chapter 9 - Notes into Manuscript: Writing the Paper
- Chapter 10 - Specimen Research Paper and Manuscript Form

There is much illustrative material included in the text and it is written in the style of the personal "you" rather than the objective third person. The material is clearly presented and easily understood.

Wilson, E. B. An Introduction to Scientific Research. New York: McGraw-Hill Book Company, 1952.

There is an enormous importance of scientific research in society today. The author contends that anyone that has tried to do research comes to face an inefficient endeavor. Inefficient because the exploration into the unknown cannot be made in advance with the precision of a mass produced industrial process. This book collects in one place a number of general principles, techniques, and procedures which successful investigators have found helpful. Wilson has designed this book for students beginning research and for those experienced research workers who wish introduction to other various topics. Wilson has placed himself as a collector of ideas from many areas and illustrates them with many actual examples. Wilson deals with the entire research method: from the choice and statement of the problem through the finality of the research report. The author hopes that through the research process a clearer picture of life will prevail.

Wilson, John. Philosophy and Educational Research. Great Britain: National Foundation for Educational Research, 1972.

In this book Wilson attempts to tie in philosophy with research to a relevant manner. It is Wilson's contention that philosophers and researchers are at odds with each other because their critical thought has more often than not been destructive rather constructive. Wilson attempts to be constructive and makes several plausible points: the aim distinction, and methodology. Wilson

makes use of the methodological team work approach with members of the team being from different disciplines. Briefly, Wilson gives an interesting and different approach: steps in methodology, research in education, definition, facts intelligence, concepts, prejudice, motivation and practical suggestions. From the reader's standpoint the message from this book is: the researcher must have time to think seriously. Problems in education are difficult and the need is for arguing with others rather than yourself. Wilson taking this stand should perhaps deal with the establishment of proper communication channel with others. A recommended text because of its approach to research (thought).

Winer, B. J. Statistical Principles in Experimental Design. New York: McGraw-Hill Book Company, 1962.

This book emphasizes the basic principles underlying design for experiments rather than mathematical derivation approach associated with relevant sampling techniques. This book is for the advanced student desiring comprehensive reference in research work. It provides an intense reference for statistical principles. It emphasizes research design, terminology in sampling, testing the hypotheses and can be recommended for the advanced student. The book is intense, complex and thorough in its approach to research.

Wise, John, Robert B. Nordberg and Donald J. Reitz. Methods of Research in Education. Boston: D. C. Heath and Company, 1967.

The purpose of this book is to discuss the study of education, especially from the point of view of the graduate student or neophyte researcher who is unfamiliar with the basic research techniques and concepts of education. The authors' objective is to provide insight into the field of educational research. This book explores the following areas regarding research: development of the hypotheses, review of the literature, various methods, case studies, experimental techniques, and the interpretation of statistics. Of further interest is the section of philosophy and the philosophic method. Briefly explained the authors consider the philosophic method radical and it deals with the concept of precise thinking and reasoned dialogue between mind and reality. For the chapter dealing with philosophic method the text is worth obtaining; certainly radical and at root level as far as new outlook upon research.

Yates, Frank. Sampling Methods for Censuses and Surveys.
New York: Hafner Publishing Company, 1960.

This book is designed and written for those researchers who have little training in mathematical statistics, but have had some training in the presentation and handling of statistical data. This book is easy to understand and should be recommended for the clear presentation of the research process. The author deals with sampling process, requirements of a good sample, the structure of various types of samples, and the combination of the complete census and the sample survey. In addition mention is made of the practical problems arising in the planning of a survey, execution, analysis and methods of reducing sampling error. The author deals with formulas to a limited degree; and by the use of them illustrates several computations available to the researcher.

Zeisel, Hans. Say It with Figures. New York: Harper and Row, 1967.

Modern social life has become too complicated to be perceived by direct observation. The complexity of social events requires a language of quantity. Briefly sketched this book leads to three types of procedures: classify, summarize, and interpret. In all three areas Zeisel starts with specific problems and develops the general logical implications. This book is a readable text (easy to comprehend) and should be recommended for the beginning research student. The use of numbers and the relation to per cents regarding data in respect to research is well handled. Zeisel contributes to research the following: thinking in a logical manner and the interpretation of figures in a simplified manner.

Zetterberg, Hans L. On Theory and Verification in Sociology.
New Jersey: Bedminster Press, 1965.

This text deals with the humanistic content of sociology and the humanistic aspect of the education of sociologists. This book makes a strong attempt to define the scientific approach and discipline to the field of sociology. Zetterberg deals with definitions in sociology and the variety contained therein: further he deals with the aspect of the proposition in the field of sociology. Of particular interest to the researcher might be the confirmation of complex theories and the testing of theory through prediction. The reader will find this book valuable because it has an appealing approach to research, is readily comprehended, and the author makes frequent use of examples in his dialogue.

Recreation 253. Advanced Mountaineering, Survival and Wilderness Living. Two units.

Prerequisites: Recreation 202 Camp Leadership, Recreation 250 Basic Mountaineering or approval by instructor based on prior experience.

Course Description: Advanced studies in the skills essential to wilderness; travel and survival; identification of: oneself through stress; orientation for survival--attitude; cross country orienteering; edible plants--identification and preparation; environmental hazards--lightning, avalanche, snow/ice travel, water.

Course Outline:

- I. Orientation for survival. Identification of the basic needs--food, water, shelter, orientation, health of environmental hazards and importance of mental attitude.
- II. Wilderness emergencies and skills.
- III. Cross-country orienteering and wilderness travel.
 - A. With simple or natural aids--sun, stars, planets; plant and animal indices; primitive sextant.
 - B. With technical aids--compass, maps, sextants, radio direction finders.
 - C. Use of landmarks, lines of position and standard navigation procedures.
- IV. Edible plants and water sources.
 - A. Foods: nutritional requirements.
 - B. Plants--identification of common plants and their uses, field tests for poisonous plants; food preparation without utensils.
 - C. Animals--traps, snares, stalking, fish poisons, fishing by hand.
 - D. Water:
 - A. Needs
 - B. Sources: sunstills, wells, plants, animal tissues, sea water.
 - C. Purification, heat, filters, chemical.
- V. Survival shelters.
 - A. Main factors: temperature, wind, water, ease of construction, insects, and pests, comfort.
 - B. Materials used: caves, stone, snow, plant foilage, bark slab, reflector.
 - C. Fire:
 1. Simple materials--fire bow, stone and steel, natural tinders and fuels.
 2. Technical materials--metal match, lens, cartridge, battery spark.

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